

## RENAISSANCE OF PARAPSYCHOLOGY

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Investigations in the frontier areas of modern natural science were the focus of a Congress held in October 1976 in Alma-Ata, the capital of the Kazakh Soviet Republic. Only three guests from the West were permitted to participate. One of them was Esotera staffer Scott Hill. Parapsychology was not taken up at the conference. The author obtained information on the subject more or less unofficially, only at the fringes and after the completion of the meeting.

/Text/ Does parapsychology actually exist in the USSR? This field is officially outside the realm of traditional psychology and it is therefore not mentioned in psychological literature. Nor is there any Institute of Parapsychology in the Soviet Union. However, in the most recent edition of the Soviet Encyclopedia, Volume 19/1974, there is the following very interesting definition under "P": The domains of parapsychological research is based on 1. forms of sensory perception occurring via a mode of information transmission that cannot be explained by the mechanism of known sensory organs; 2. corresponding forms of action of living substance on physical phenomena, which occur outside the organism without involvement of muscular force, due to will training, mental action, etc. This parapsychological relationship also includes concepts such as 'psychotronic,' 'bio-information,' 'bio-introscopy', etc." It is interesting that the concept of psyche does not occur anywhere.

This definition differs in substance from the earlier editions of the Soviet Encyclopedia which attempted to represent parapsychology as an outgrowth of decadent western culture. This is easy to understand if we consider the various philosophies

that were misconceived by Marxism-Leninism as less materialistic ideologies. This led scientific research in psycho-energy into ideological problems, even though most investigators were not even properly aware of the political implications of their work. The primary question to be answered is: Does the existence of the psyche (or soul) contradict a materialistic philosophy? Is the mind (thinking, feeling, wishing) identical with a soul? Is one of the two identical with the brain?

#### Parapsychology Literature By Political Publishers

According to a story circulated in the Soviet Union, the most recent Soviet renaissance in parapsychological research stems from a trip to India made by former Premier Khrushchev in the course of which he observed a number of yogis in scientific experiments, e.g. in respiratory and metabolic control while "being buried alive." The story goes that no sooner had he returned to Moscow he put together a group of experts and ordered them to investigate these phenomena with an initially approved research budget of one million rubles.

As good Marxists and therefore materialists did the scientists refuse to acquiesce to this demand? It is unlikely because Lenin himself was interested in cosmobiology and matters of the psyche. However, it is clear that many Soviet scientists first had to make their interest in psychic phenomena conform rationally with scientific Marxism.

In this connection, we reviewed the work of the Russian physiologist Leonid L. Wassiliev who worked as a pioneer at the Leningrad Brain Research Institute between 1925 and 1965. He was known to have performed numerous experiments in the area of "telepathic hypnosis" or "mental suggestion from a distance". Sovietologists feel it is significant that these experiments performed in the twenties and thirties were first published in the sixties, and this by a political publisher in a small volume entitled "Mysterious Phenomena of the Human Psyche."

A major part of this work was defense of the idea that psychic research was not contradictory to scientific Marxism.

#### Bioplasma -- The Explanation For All PSI Mysteries?

Soviet scientists in Kazakhstan have developed a theory on biological plasma -- bioplasma -- as the possible link between the effects of electromagnetic intermediate reactions and the individual parts of the biological organism. This idea

stimulated the phantasy of many western authors and entire books were written on bioplasma and how it can solve all our problems with regard to unknown intermediate actions and explain the "PSI mysteries" of psychokinesis and extrasensory perception. But what is bioplasma? In order to obtain scientific information about this rather occult idea, the author had to travel 6000 kilometers to Alma-Ata, where the theory developed in 1967 by engineer V.S. Grieschenko originated.

### Can Plasma Exist In An Organism?

Before we consider the theory of bioplasma more closely, we must briefly review what science knows about plasma. Plasma is the "fourth state of matter," beyond liquid, solid and gas. In accordance with its high inner energy, the individual atoms ionized and formed ionic gas or a high temperature plasma. (In the process, the electrons were hurled away from their nuclei at high temperatures and the plasma contains the same number of positive and negative particles.)

Soviet scientists know a lot about this type of plasma, e.g. that it can be stored and concentrated in a magnetic field. The temperature of several million degrees is so high that any conventional container would evaporate. This type of plasma could not exist in the human body with its temperature of 37°C, or could it?

If there are electrons in a solid (solid-state electronics), within semi-conductor elements at room temperature, physicists speak of an "electron gas" and also of gases made up of "holes," (the absence of an electron), protons and the combination of a hole and an electron, or "exciton" (pair formation).

The density of "electron-hole plasma" in a semi-conductor changes depending on the temperature. Heating causes an increase in the number of free electrons and holes from  $10^{13}$  electrons/sq cm to  $10^{22}$  electrons/sq cm. Various oscillations can occur in plasma of this type according to Soviet scientists and intensified oscillations in the plasma can approach the waves of visible light or UV light. Unlike the case with solid matter, each electron or hole does not belong only to one atom; rather it has broken out of the crystal lattice of the solid matter and it is manifest as a part of the "ensemble" or the totality of the solid plasmatic structure.

In 1967, Nobel prize winner St. Georgi pointed out the important part played by delocalized electrons in the biological process. He actually stimulated experimental investi-

gations on the semi-conductor properties of biological molecules such as white blood corpuscles, DNA, RNA and protein compounds. As we mentioned in the previous issue (Esotera, 3/77), the German investigator Dr F. Popp believes that the DNA helix can function as a bio-laser and emit coherent (unidirectional) radiation. The so-called Pi-electrons allegedly play a major part here since their binding to the nucleus is weaker than that of other electrons.

#### Storage in Cell Membranes

According to the view of Soviet scientists, in order to fulfill their cellular respiratory functions, mitochondria (small cellular organs) must undergo a chain of respiratory reactions. Each of these reactions includes electron transfer and plays an important part in energy conversion for the entire organism. It is estimated that there are  $10^{15}$  mitochondria in the human body which make up about one percent of the body weight. By way of energy conversion, they produce energy reserves in the cell, e.g. from the energy that is liberated during biological oxidation. According to the opinion of the Polish investigator S. Monczarski, electron plasma found in mitochondria displays a greater ionic density than the ionosphere.

Soviet researchers have also focused on the cell membrane as a special object to study in terms of a possible reservoir. They have prompted the view that "electron-hole-exiton plasma" might be stored there. Scientists L.A. Pirozyan and V.N. Arishtarhov have demonstrated the existence of the semi-conductor property in membranes, and of course membranes play an enormously important part in the biological process.

Plasma is formed by the ionization process and the formation of localized charged particles. The reverse reaction process of course also takes place; There is the reciprocal action of particles and their reversal to lower energy stages in which they are bound to the atomic nucleus. Both processes are accompanied by emission or absorption of quantities of radiation.

As previously mentioned in earlier chapters, the bioluminescence of tissues and cells is an area of intensive research in the Soviet Union. There are many electron exchange reactions during which numerous cells luminesce in the visible portion of the spectrum, as demonstrated in studies by Dr V.N. Tarusov, Professor of Biophysics at Moscow State University. He emphasizes that these are very weak light rays and difficult to detect, even when light-sensitive detectors are used (cf. Esotera 1 and 3/77, comments on the Gurvich effect).

### The Luminescence of the Beating Heart

In an experiment at the Leningrad State University supervised by Dr L. Wassiliev, a newly removed frog heart was connected to an electrical apparatus in such a manner that it continued beating, stimulated by the current impulses. Light from the heart was recorded by a UV-light sensitive photo-detector. A high level of light emission was registered when the heart beat was strongest. As the heart beat declined, even though electrical stimulation was maintained at a constant level, the UV light quantity decreased and disappeared entirely when the heart stopped beating. Two Australian investigators carried out the same experiment with a giant yeast culture. The scientists artificially produced processes such as "dying" and "birth" by addition of nutrient medium.

Without the nutrients, a number of older yeast cells exceeded their life span and died, giving off UV light. Nutrients were then injected in the yeast, making possible a "rebirth" during which UV light photons were also discharged.

Soviet scientists assume that this biological plasma contains a high level of what physicists and chemists refer to as a low entropy content. They say that this distinguishes bioplasma from conventional semi-conductor plasma. They believe that this is a system that is not in a state of thermodynamic equilibrium but that nevertheless exhibits a high degree of stability. It is their opinion that the thermal noise in bioplasma is of a low level, which indicates a particularly well organized condition. They think that the absolute temperature of a compound of this type may be near zero, even though this is hard to accept since in physics even negative temperatures are theoretically possible. However, we would assume that humans have a temperature of 37 degrees and not absolute zero!

The formation of the bioplasma on the substrate of a uniform body can give rise to a biofield (as is assumed with certainty by Soviet investigators) that is anisotropic, i.e. that has a preferred direction.

### Communication Between Cats and Plants

One of the most surprising statements that the author heard in Alma-Ata and one of the most unusual experiments he witnessed was the "cat-plant experiment," carried out by the Institute of Biophysics at the Kazakh State University after the completion of the official conference. Dr Inyushin and his associates have not yet published the study on the experiment and admit

that many more repetitions are necessary before they can give an official report. For reasons of space, these experiments that are described for the first time will be taken up in simplified form. However, they have ramifications that will probably be widely discussed in the coming years.

In principle, these are a variation of the Backster experiments, which were reported on for the first time in 1968 (cf. Esotera p 916 ff, 10/1973). The American polygraph (lie detector) specialist believes that he ascertained reactions of plants to thoughts of human intentions as noted in experiments that were not entirely undisputed. His measuring apparatus was the electric lie detector used to ascertain modifications in the bioelectrical activity of plants. The Soviet scientists designated their experiments "human-plant," "plant-human" or "animal-plant" communication and utilized a laser for optical detection. We feel that this method is superior to those of Backster and others.

A double-walled metallic chamber was installed in the laboratory. This served as a Faraday cage, preventing the penetration of electromagnetic short-wave radiation and permitting only the passage of light from the 24 mW helium-neon laser. During the experiment, all light sources were shut off to prevent the sensitive photomultiplier from responding to foreign light. In the cage, on a table, there stood a plant which interrupted the laser beam. The other participant in the experiment was outside the cage. This was a house cat squeezed into a metal box from which only its head protruded. The cat's ears were fitted with two electrodes connected to an electrical stimulator outside the cage.

#### Plant Reacts to Cat's Meowing

After a stable initial base line had been recorded for the plant leaf, the cat was placed in the chamber with the plant (but at some distance from it). At a signal from Inyushin, 50-volt impulses were transmitted in short blasts over the cat's ears, causing the cat to meow so pitifully that it was even painful for the author and his Danish colleagues. This dreadful treatment apparently also affected the plant, as indicated by the light level. The intensity of the polarized laser light transmitted through the plant leaf rose.

Inyushin assured us that this experiment would be repeated, using another plant as a participating element, and a human, if possible a "healer."

Picture captions:

- P 302: Electron microscopic picture of a DNA helix, the carrier of genetic information. The Soviet scientist Dr F. Popp believes that DNA (desoxyribonucleic acid) functions as a "biolaser" and emits "bundled" light. Does it serve for the regulation of biological growth?
- P 303: After the completion of the congress, Prof V.M. Inyushin, 35 years (left), director of the Alma-Ata Conference, gave our staff member some information on experiments at the Institute for Biophysics in Alma-Ata (right) regarding the "Baskster effect;" He observed a successful "biocommunication" between a cat and a plant.

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